Name: Rachel Fischhoff Grade: 5 Date: April 30, 2012

Triangle Area Exploration

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| Lesson Sources: triangle packet (Mr. O) |
| Lesson Objectives: Students will be able to explore the area of a triangle by expanding and stretching understanding of the area of a rectangle. |
| Standards: Common Core 6 G 1. Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of  solving real-world and mathematical problems. |
| Multicultural Content: |
| Materials and Advanced Preparation: triangles packet |
| Prior Knowledge and Skills Needed: knowledge of how to find the area of a rectangle |
| Key/New Vocabulary: compose/decompose—in the context of geometric figures (to combine multiple shapes into one/to separate one shape into multiple shapes) |

Lesson Procedure: Part One

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| **Time** | **Teacher Actions** | **Student Learning Activities** | **Form of Assessment** |
| 1 min | **1. Connection**   * Mathematicians, you have been doing some great mathematical thinking in this geometry unit. One thing that I recognized after looking over the math quiz we had Friday is that a lot of us are struggling with finding the are of a triangle. * Today, I want to revisit the area of triangles. But, instead of starting with the formula, we’ll be starting with what we already know—how to find the area of rectangles. | Explain purpose of mini-lesson |  |
| 10 min max | **2. The Teaching (The Giving of Information):**   * Today, we will be using what we know about the area of rectangles to find the area of triangles. * Let’s look at one problem together to begin. This may look familiar. * Hmmm, I know that I can find the area of this rectangle by multiplying the length by the width. But I want to find the area of this triangle. I see that this triangle is half of the are of this rectangle. So, if I can find the area of this rectangle, and then divide that quantity by two, I’ll have the area of this triangle. | * Active listening * Recalling previous triangle lesson | * Active listening |
|  | **3. Have-A-Go (optional)**   * Now it’s your turn. Take a look at the first page of this packet. Thumb on your knee when you know the area of triangle PRS. | How will students be actively involved?  By:   * Practicing the mini-lesson | * Sharing out |
|  | **4. The Link**   * Take a look at the rest of the packet. The problem solving you did on page one will prepare your mind to tackle the rest of these problems. The problems get progressively trickier, so you’ll have to hold on to your smart thinking and apply it to new situations. * Today, you will work independently, or with a partner at your table group, to complete this packet. * You’ll have about 20 minutes, because we’ll come back together to debrief and continue this lesson. | **(Workshop Time)**   * Problem solving * Strategy: finding and halving rectangles. | * Conferring |
|  | **5. Closing (at the share)**  Share some of the problem-solving strategies from the trickier, end of packet problems.  How can we generalize what we’ve seen?  How does this illuminate/support/complicate what we knew about the formula for area of a triangle? | * Sharing out different strategies—identify beforehand | * Facilitate generalization//application to all triangles |

**Reflections:**

How did the lesson plan work? What was effective? What did you learn? What would you change for tomorrow or the next time you will use this plan?